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Pre-service teachers' opinions about constructivism

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Abstract

Teachers' teaching methods change because of the new organizations in the school curricula in 2005-2006 academic year. For this reason, teachers and pre-service teachers should use the teaching methods which are based on constructivism. The aim of this study is to investigate pre-service teachers' opinions about constructivism and to determine the different ideas among the pre-service teachers in different departments. This research was conducted on 312 pre-service teachers who are in Turkish Language Education (TurkEd), Foreign Language Education (ForEd), Elementary Mathematics Education (MathEd), Early Childhood Education (EarlyEd), Primary Education (PrimEd) and Computer Education and Instructional Technology (CompEd) departments in a university in Ankara. Data were collected by "Teachers' Sufficiency Scale" to evaluate the opinion of the pre-service teachers. The scale contains five factors about students, setting the stage, dimension about teaching and teaching organization. Results were investigated according to the variability of sub dimensions and pre-service teacher departments. Data were analyzed with percentage. Analysis of the scale revealed that pre-service teachers think that a constructivist teacher should be aware of the students' needs and interests, social, emotional and socio-economical differences. S/he always responds the needs of the students in her/his lesson plans and teaching style. S/he knows how to take the attention of the students, how to adopt them into their environment. S/he also considers being objective, asking thought provoking questions, giving feedback and to stick to the aim in the assessment process.

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1. Introduction

In traditional education, teacher is the center of the knowledge and the authority to transfer knowledge to students verbally. Students mostly memorize what they are trying to learn. Constructivism tries to find out how students learn and describes that students understand and construct the knowledge of the world by their experiences (Kara & Sahin, 2008). Doolittle (1999), explains constructivism under eight topics as followings; Learning should take place in authentic and real-world environments, involve social negotiation and mediation, content and skills should be made relevant to the learner, content and skills should be understood within the framework of the learner's prior knowledge, students should be assessed formatively, serving to inform future learning experiences, students should be encouraged to become self-regulatory, self-mediated and self-aware, teachers serve primarily as guides and

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facilitators of learning, not instructors, and teachers should provide for and encourage multiple perspectives and representations of content.

In this study it was aimed to analyze pre-service teachers' views about constructivist curricula. In the recent years very rapid changes are being experienced in the education system in Turkey. A significant change was introduced in the approach to curriculum development, and it was a radical shift from a teacher and subject based approach to student-based approach.

2. Method

This research is a descriptive field study. Data was collected in the spring semester of 2007-2008 academic year.

Sample: Participants are 312 pre-service teachers of a university in Ankara. The mean age of the participants is 23. 83.3% of the sample is female and 16.7% is male. Of the pre-service teachers included 18,3% Elementary Mathematics Education, 23,7% Early Childhood Education, 20,5% Primary Education, 9% Turkish Language Education, 12,5% Foreign Language Education, 16% Computer Education and Instructional Technology department.

Instrument: Teachers' Sufficiency Scale was used in the study. The scale was developed incorporating constructivist learning in the literature. The participants were asked to indicate the sufficiency of teachers to comply with constructivism they attached to each item on a five point scale from *always* (1) to *never* (5). There were five factors which evaluates teachers' use of constructivist education (Akdağ, 2007). Akdağ (2007) explained the factors as: **Dimension about students:** Teachers should know the characteristics, needs, strengths of their students. This factor includes the cognitive, physical, social and emotional characteristics of the students. **Teaching organization:** This dimension of the scale is related with curriculum and planning. It explains how to develop materials and teaching plans to provide effective teaching environment. **Dimension about teaching:** This dimension focuses on the teaching style of the teacher, classroom management, cognitive and physical activities in the classroom, motivation, individual differences, and communication with the students. **Setting the stage:** This part of the scale includes objectivity in the assessment process, the quality of the assessment, giving feedback and types of the assessment techniques.

It took approximately 15–20 minutes to complete the scale. The structure validity of the scale is between 0.37 and 0.73 and the total article correlation is between 0.24 and 0.68. Internal consistency level of the scale is Cronbach Alpha 0.79 and the invariability level according to the time is 0.81 (Akdağ, 2007). For each item we calculated the percentage scores. The data derived from the research were processed and analyzed using SPSS 13.

3. Result

The major findings of the study are summarized as follows: First, we described the differences by pre-service teachers from different departments. This is followed by pre-service teachers' views about constructivism as a total.

All TurkEd and PrimEd pre-service teachers considered the dimension about students as "much enough". However, ForEd, MathEd, EarlyEd, PrimEd and CompEd pre-service teachers reported "enough" for this part. MathEd pre-service teachers note "much enough" that students' abilities and interests are known and each students have different needs. "Students' readiness are known" was answered "much enough" by CompEd pre-service teachers while ForEd pre-service teachers were rated (38,5%) "partially enough". The majority of EarlyEd pre-service teachers reported "much enough" both each students have different needs and students' readiness are known. Generally, a majority of pre-service teachers mentioned "enough" for items related with individual differences, abilities, social, economical characteristics and communication with peers and also "much enough" about needs, readiness and supporting communication.

All teaching organization items were answered "always" by all TurkEd and PrimEd pre-service teachers. Rates of ForEd, MathEd, EarlyEd, CompEd pre-service teachers were ranged between "always" and "usually". To define teaching objectives and to plan lessons according to students' needs and interests are rated "always" by all respondents in the study. Overall pre-service teachers from all departments were answered "always" for teaching organization in constructivism. On the topics "takes attention of students" and "tells students about aims of the

lesson”, Pre-service PrimEd and TurkEd teachers chose “always” option. Within all participants, common chosen option is “usually”.

Most of the participants think that a constructivist teacher “always” connects lesson topics to the real life and teaches using physical and mental activities. Pre-service ForEd, PrimEd and TurkEd teachers chose the option “always” on the topic that constructivist teacher lets the children add close environment to their learning habitat. 37,2% of all participants chose “usually” option on this topic. Nearly 10% of the participants chose “rarely” and “never” option. These students might be thinking that close environment means the family. We know that some families help children with their homework and performance duties. 52,6% of the participants have the idea that constructivist teacher “always” supports students to discover different and new things. 47,8% of the participants think that constructivist teacher “always” motivates students to the classes. This ratio climbs up to 71,9% within pre-service PrimEd teachers. 42,6% of the participants think that constructivist teacher “always” give duties to all students. This ratio is 64,1% within pre-service PrimEd teachers. Pre-service PrimEd and EarlyEd teachers think that constructivist teacher “always” lets children to study and work independently in activities. Other departments chose “usually” on this topic. This shows us, in early ages, being independent when learning and discovering is important and the idea is supported by pre-service PrimEd and EarlyEd teachers. 48,4% of the participants think that constructivist teacher “usually” detects students learning styles and how students understand the topics. Pre-service PrimEd teachers chose “always” option on this topic.

Participants think that constructivist teacher “always” lets students ask questions to each other (42,6 %) and makes students have a role in the classroom (60,3%). These both topics are the basics of constructivism and student-centered learning. On the topic that the teacher is the only authority in classroom, 27,2% of the participants chose “sometimes” option. Participants who chose “usually” and who chose “rarely” has nearly the same ratio. This shows us the idea that teacher is the only authority in classrooms is a strong belief and not easily breakable. Pre-service PrimEd and TurkEd teachers think that constructivist teacher “always” makes activities that improve students’ responsibility. Within all participants, “usually” option is chosen by 45,5%. Pre-service PrimEd teachers think that a constructivist teacher “always” lets students to create discussion groups by 50%. Within all participants, “usually” option is chosen by 42%.

One important point in constructivist approach is to let children discover the knowledge themselves. The topic about transferring the children ready-to-use information, participants chose “rarely” option by 29,2% and “never” by 15,4%. It is important for the teachers to use simple, fluent and understandable language. 49% of all participants chose “always” option on this topic. 54,5% of the participants think that a constructivist teacher must be objective in the assessment process. Great number of the students of EarlyEd, ForEd, CompEd answered the objectivity item of the assessment and measurement part of the scale as “usually” and most of the students of MathEd, PrimEd and TurkEd answered this item as “always”. Students of all the departments except ForEd argues that a constructivist teacher should ask thought-provoking questions during the assessment process. Students of ForEd thinks that this situation should occur usually but there are times that not thought-provoking questions could be asked in the assessment process. 52,2% of the students answered this item as “always”. Students of PrimEd, TurkEd and MathEd think that constructivist teacher should “always” give some time to think for the students after asking a question. Students of other departments consider usually give some time for a question. 45,2% of the students answered this item as “always” and at the same percentage as “usually”.

Students of EarlyEd, PrimEd and TurkEd think that open ended questions should always be asked to assess the students. However, students of MathEd and CompEd support asking open-ended questions “usually” and ForeEd consider “sometimes”. Students of MathEd and CompEd departments focus on the certain answers. As the ForEd students deal with language teaching such as grammar and vocabulary, they sometimes ask open ended questions. 39,1% of the students give the answer of “usually” and 38,1% as “always”.

Pre-service teachers have some hesitation about the types of the assessment process. There is no consistency between the answers. Most of the answers pointed out “usually”, “sometimes” and “rarely”.

Students of MathEd, TurkEd, PrimEd and CompEd think that homework and projects should be checked by the teacher “always” when students of EarlyEd and ForEd think that this should be performed “usually”. 49% of the students answered as “always”. Except the students of EarlyEd and PrimEd point out the importance of giving feedback all the time in the assessment process students of these departments think this situation should occur “usually”. 58,7% of the students give the answer of “always”. Students of the all the departments (59,6% is “always”) think that assessment should be appropriate with the aim of the assessment process.

4. Discussion

The aim of the study is to investigate the pre-service teachers' opinion about the constructivism theory. When you look at the dimension about students, students' characteristics are rated between much enough and enough by pre-service teachers. Pre-service teachers think that to know students' individual differences was important. One study about teachers' view of new curricula in Turkey was resulted that 42% of teachers were agreed partially new curricula which were based on constructivism theory taking into consideration students' cognitive levels. However, ForEd pre-service teachers reported that students' readiness are known was partially pointed out in constructivism. This result may be explained that there is no any readiness for foreign language learning. Especially general result of all departments in dimension about students rated "much enough" about needs, readiness and supporting communication. This reason is showed that pre-service teachers taught and gave importance to individual differences, experiences and student-teacher, and student-student interaction in constructivism issues. Results indicated that pre-service teachers identified teaching objectives and to plan lessons according to students' needs and interest as always. They considered students' interest, needs and teaching objectives as part of the constructivism. These findings were supported by results of the dimension about students in the study.

From the assessment part of the scale these results would be derived from the answers of the students. Most of the students think that the assessment process must be objective. The questions of the assessment process must direct students to think. Therefore questions should be thought provoking and students need time to think for the answer. Most of the pre-service teachers think that open-ended questions should be asked during the lesson. However, MathEd, CompEd and ForeEd pre-service teachers suggest asking open-ended questions "usually" and "sometimes". Pre-service teachers do not have a consensus on giving oral and written examination. Their answers vary between "usually", "sometimes" and "rarely". Pre-service teachers think that a constructivist teacher checks homework and projects and always give feedback to the students. They also think that the assessment process must be appropriate with the aim.

References

- Akdağ, E. (2007). Development of the teachers' sufficiency scale in relation to constructivist learning: Reliability and validity analysis. *Educational Science: Theory & Practice*, 7(1), 167-175.
- Doolittle, P.E. (2007). *Constructivism and online education*, In proceedings of online Conference on teaching online in higher education, Fort Wayne, USA. Accessed through Virginia Tech online [28/11/2008]: <http://edpsychserver.ed.vt.edu/tohe/text/doo2.pdf>
- Karal, H., Şahin, Z. (2008). *Classroom teacher's point of view about educational system based on constructivist theory that is model of multiple intelligences*, In proceedings of international educational technology conference (IETC) , Eskisehir, Turkey, 475-480.
- Yapıcı, M. & N., H. Leblebiciler (2007). Öğretmenlerin yeni ilköğretim programına ilişkin görüşleri. *Elementary Education Online*, 6(3), 480-490, 2007. [Online]: <http://ilkogretim-online.org.tr>